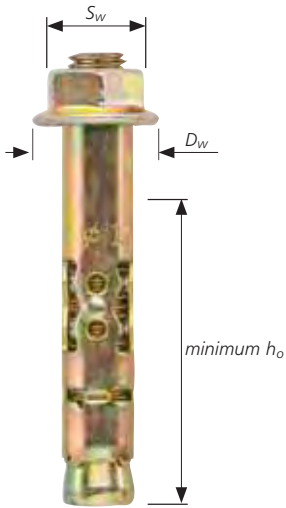


Product Information



DESCRIPTION

The Rawlok® is a torque controlled expansion anchor comprising a split sleeve and a bolt incorporating an expander wedge.

It is a through fixing, thus allowing the hole in the substrate to be drilled through the pre-positioned fixture, eliminating the need for marking out, ensuring fast and simple installation.

SUITABLE FOR USE IN:

Concrete
Brickwork
Blockwork
Stone.

FEATURES

1. Bolt and drill size marked on sleeve to ensure correct installation.
2. Integral collapse feature to ensure maximum clamping force is applied to the fixture.
3. Anchor designed for optimum performance in most base material types.
3. One piece flange nut.

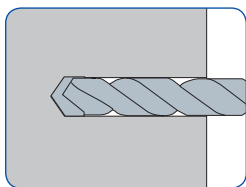
TYPICAL APPLICATIONS

- Stadium seating
- Radiators
- Satellite dishes
- Signs
- Shutters
- Garage doors

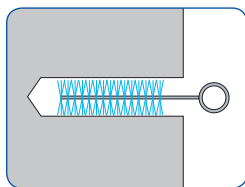
RAWLOK® Bolt Projecting - Zinc plated

BOLT SIZE (d)	BOLT LENGTH (mm) (l)	NUT DIAMETER (mm) (AF) (Sw)	FLANGE DIAMETER (mm) (Dw)	MAXIMUM FIXTURE THICKNESS (mm) (T _{fix})	MINIMUM HOLE DEPTH IN STRUCTURE (mm) (h _o)	MINIMUM EFFECTIVE EMBEDMENT DEPTH (mm) (h _{eff})	MINIMUM SUBSTRATES THICKNESS (mm) (h _{min})	HOLE DIAMETER		RECOMMENDED TIGHTENING TORQUE(Nm)				(ZINC PLATED)												
								IN FIXTURE (mm) (d _f)	IN STRUCTURE (mm) (d _o)	CONCRETE 30N/mm ² (T _{inst})	BRICKWORK 20.5N/mm ² (T _{inst})	BLOCKWORK 14N/mm ² (T _{inst})	BLOCKWORK 7N/mm ² (T _{inst})	PRODUCT CODE	NEW CODE											
M5	56	8	12	25	30	26	50	8	6.5	2.5	2.5	1.5	1.0	69-506	RLK-P-05056											
	40			10										35	10	8	6.0	6.0	3.0	2.0	69-508	RLK-P-06040				
M6	65	10	14	35	40	36	65	12	10	11.0	11.0	6.0	4.0	69-510	RLK-P-06065											
	50			10										40	10	11.0	11.0	6.0	4.0	69-514	RLK-P-08050					
	75			13										17	36	40	36	65	12	10	11.0	11.0	6.0	4.0	69-516	RLK-P-08075
	95			13										17	55	40	36	65	12	10	11.0	11.0	6.0	4.0	69-518	RLK-P-08095
M8	60	15	21	10	55	43	85	14	12	22.0	22.0	11.0	8.0	69-520	RLK-P-10060											
	75			27										55	43	85	14	12	22.0	22.0	11.0	8.0	69-522	RLK-P-10070		
	100			50										55	43	85	14	12	22.0	22.0	11.0	8.0	69-524	RLK-P-10100		
	130			80										55	43	85	14	12	22.0	22.0	11.0	8.0	69-525	RLK-P-10130		
M12	110	18	26	55	60	50	90	18	16	38.0	38.0	25.0	12.0	69-528	RLK-P-12110											
	145			85										60	50	90	18	16	38.0	38.0	25.0	12.0	69-530	RLK-P-12145		

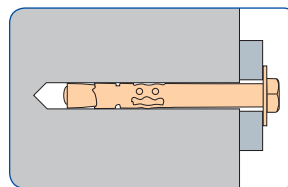
Installation



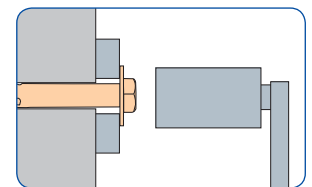
1. Drill a hole of required diameter and depth.
Note: Fixing into mortar joints should be avoided.



2. Remove debris and thoroughly clean hole with brush and pump.



3. Insert Rawlok® Sleeve Anchor through the fixture into the hole.



4. Tighten to recommended torque with torque wrench.

Specification Data

RAWLOK® Bolt Projecting Performance Data

SIZE	CONCRETE, $f_{ck,cube} = 30N/mm^2$ (C20/25)									
	CHARACTERISTIC LOAD (kN)		DESIGN LOAD FACTORED (kN)		RECOMMENDED LOAD UNFACTORED (kN)		CHARACTERISTIC EDGE DISTANCE (mm)		CHARACTERISTIC SPACING (mm)	
	TENSION (N_{Rk})	SHEAR (V_{Rk})	TENSION (N_{Rd})	SHEAR (V_{Rd})	TENSION (N_{rec})	SHEAR (V_{rec})	TENSION ($C_{cr,N}$)	SHEAR ($C_{cr,V}$)	TENSION & SHEAR ($S_{cr,N}$) ($S_{cr,V}$)	
M5	5.0	3.6	2.3	2.0	1.9	1.9	60	60	60	
M6	6.9	5.4	3.2	3.0	2.7	2.5	70	80	80	
M8	9.3	9.0	4.3	5.0	3.6	4.2	80	100	100	
M10	11.4	12.6	5.3	7.0	4.4	5.8	100	120	120	
M12	14.5	19.8	6.7	11.0	5.6	9.2	120	160	160	

SIZE	BRICKWORK, $f_{ck} = 20.5N/mm^2$						BLOCKWORK, $f_{ck} = 14N/mm^2$						BLOCKWORK, $f_{ck} = 7N/mm^2$					
	CHARACTERISTIC LOAD (kN)		DESIGN LOAD (kN)		RECOMMENDED LOAD (kN)		CHARACTERISTIC LOAD (kN)		DESIGN LOAD (kN)		RECOMMENDED LOAD (kN)		CHARACTERISTIC LOAD (kN)		DESIGN LOAD (kN)		RECOMMENDED LOAD (kN)	
	TENSION (N_{Rk})	SHEAR (V_{Rk})	TENSION (N_{Rd})	SHEAR (V_{Rd})	TENSION (N_{rec})	SHEAR (V_{rec})	TENSION (N_{Rk})	SHEAR (V_{Rk})	TENSION (N_{Rd})	SHEAR (V_{Rd})	TENSION (N_{rec})	SHEAR (V_{rec})	TENSION (N_{Rk})	SHEAR (V_{Rk})	TENSION (N_{Rd})	SHEAR (V_{Rd})	TENSION (N_{rec})	SHEAR (V_{rec})
M5	2.4	3.4	1.1	1.9	0.9	1.6	1.9	3.4	0.9	1.9	0.8	1.6	1.5	2.3	0.7	1.3	0.6	1.1
M6	3.7	5.2	1.7	2.9	1.4	2.4	3.2	5.2	1.5	2.9	1.3	2.4	2.4	2.5	1.1	1.4	0.9	1.2
M8	5.0	8.6	2.3	4.8	1.9	4.0	4.5	8.6	2.1	4.8	1.8	4.0	3.5	2.7	1.6	1.5	1.3	1.3
M10	6.0	10.3	2.8	5.7	2.3	4.8	5.6	10.3	2.6	5.7	2.2	4.8	4.5	3.1	2.1	1.7	1.8	1.4
M12	7.3	13.1	3.4	7.3	2.8	6.1	6.9	13.1	3.2	7.3	2.7	6.1	5.8	3.4	2.7	1.9	2.3	1.6

For further explanations on calculations please see pages 10 and 11
 When calculating loads in brickwork and blockwork apply the published edge distance and spacing for concrete and assume these figures to be the absolute minimums. Concrete reduction factors must NOT be applied.

Reduction Factors - Edge and Spacing Distances for Rawlok® Sleeve Anchor Bolt Projecting.

The full characteristic edge and spacing distances shown in the table above are the minimum allowable for the quoted DESIGN RESISTANCE or RECOMMENDED LOAD, depending on your design method.

Where these dimensions are not achievable, the appropriate reduction factor/s from the tables below must be applied to the DESIGN RESISTANCE or RECOMMENDED LOAD. Choose the required bolt diameter across the top of the appropriate table and read down the left hand column until actual edge or spacing distance is found.

Read off the reduction factor where the two lines intersect (interpolate as required). Multiply this factor by the DESIGN RESISTANCE or RECOMMENDED LOAD quoted in the table. On the occasion that multiple close edge and/or spacing distances occur, the appropriate reduction factors must be applied.

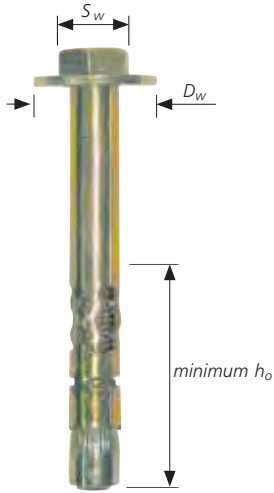
Edge Distance (Concrete Only)

EDGE (mm)	TENSILE: EDGE REDUCTION FACTORS					EDGE (mm)	SHEAR: EDGE REDUCTION FACTORS				
	M5	M6	M8	M10	M12		M5	M6	M8	M10	M12
40	0.75					40	0.58				
50	0.87	0.79				50	0.79	0.53			
60	1.00	0.89	0.81			60	1.00	0.69	0.50		
70		1.00	0.91	0.77		70		0.84	0.62	0.48	
80			1.00	0.85		80		1.00	0.75	0.58	
90				0.92	0.81	90			0.87	0.69	0.45
100				1.00	0.87	100			1.00	0.79	0.53
120					1.00	120				1.00	0.69
140						140					0.84
160						160					1.00

Spacing (Concrete Only)

SPACING (mm)	TENSILE & SHEAR REDUCTION FACTORS				
	M5	M6	M8	M10	M12
40	0.80				
50	0.90	0.77			
60	1.00	0.85	0.76		
70		0.92	0.82	0.75	
80		1.00	0.88	0.80	
90			0.94	0.85	0.74
100			1.00	0.90	0.77
120				1.00	0.85
140					0.92
160					1.00

Product Information



DESCRIPTION

All purpose expansion anchor for use in medium weight applications in brickwork, blockwork and hard masonry. Through fixing, allows drilling through pre-positioned fixture.

No marking out required.

Available in yellow passivated zinc plated steel and stainless steel.

SUITABLE FOR USE IN:

Concrete
Brickwork
Blockwork
Stone.

FEATURES

1. 5.8 grade bolt for high performance.
2. Bolt and drill size marked on sleeve for accurate installation.
3. Integral collapse feature to ensure maximum clamping force is applied to the fixture.
4. Anchor designed for optimum performance in most base materials.

TYPICAL APPLICATIONS

- Stadium seating
- Radiators
- Signs
- Satellite dishes
- Wall plates
- Shutters
- Garage doors.

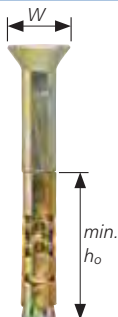
RAWLOK® Loose Bolt - Zinc plated

BOLT SIZE (d)	BOLT LENGTH (l)	HEAD DIAMETER (mm) (AF) (Sw)	WASHER DIAMETER (mm) (Dw)	MAXIMUM FIXTURE THICKNESS (mm) (Tfix)	MINIMUM HOLE DEPTH IN STRUCTURE (mm) (ho)	MINIMUM SUBSTRATES THICKNESS (mm) (hmin)	MINIMUM EFFECTIVE EMBEDMENT DEPTH (mm) (hef)	HOLE DIAMETER		RECOMMENDED TIGHTENING TORQUE (Nm)				PRODUCT CODE	NEW CODE
								IN FIXTURE (mm) (df)	IN STRUCTURE (mm) (do)	CONCRETE 30N/mm ² (Tinst)	BRICKWORK 20.5N/mm ² (Tinst)	BLOCKWORK 14N/mm ² (Tinst)	BLOCKWORK 7N/mm ² (Tinst)		
M8	60	13	24	15	45	70	32	12	10	11.0	11.0	6.0	4.0	69-715	RLK-L-08060
	80			35										69-716	RLK-L-08080
M10	70	17	30	14	55	85	40	14	12	22.0	22.0	11.0	8.0	69-722	RLK-L-10070
	100			44										69-721	RLK-L-10100

RAWLOK® Loose Bolt - Stainless Steel

BOLT SIZE (d)	BOLT LENGTH (l)	HEAD DIAMETER (mm) (AF) (Sw)	WASHER DIAMETER (mm) (Dw)	MAXIMUM FIXTURE THICKNESS (mm) (Tfix)	MINIMUM HOLE DEPTH IN STRUCTURE (mm) (ho)	MINIMUM SUBSTRATES THICKNESS (mm) (hmin)	MINIMUM EFFECTIVE EMBEDMENT DEPTH (mm) (hef)	HOLE DIAMETER		RECOMMENDED TIGHTENING TORQUE (Nm)				PRODUCT CODE	NEW CODE
								IN FIXTURE (mm) (df)	IN STRUCTURE (mm) (do)	CONCRETE 30N/mm ² (Tinst)	BRICKWORK 20.5N/mm ² (Tinst)	BLOCKWORK 14N/mm ² (Tinst)	BLOCKWORK 7N/mm ² (Tinst)		
M6	40	10	14	10	35	55	26	10	8	6.0	6.0	3.0	2.0	69-308	RLK-A2-06040
M8	50	13	17	10	40	65	36	12	10	11.0	11.0	6.0	4.0	69-314	RLK-A2-08050
M10	75	15	21	27	55	85	43	14	12	22.0	22.0	11.0	8.0	69-322	RLK-A2-10075

RAWLOK® Countersunk - Zinc plated



BOLT SIZE (d)	BOLT LENGTH (l)	HEAD DIAMETER (mm) (AF) (Sw)	MAXIMUM FIXTURE THICKNESS (mm) (Tfix)	MINIMUM HOLE DEPTH IN STRUCTURE (mm) (ho)	MINIMUM SUBSTRATES THICKNESS (mm) (hmin)	MINIMUM EFFECTIVE EMBEDMENT DEPTH (mm) (hef)	HOLE DIAMETER		RECOMMENDED TIGHTENING TORQUE (Nm)				PRODUCT CODE	NEW CODE
							IN FIXTURE (mm) (df)	IN STRUCTURE (mm) (do)	CONCRETE 30N/mm ² (Tinst)	BRICKWORK 20.5N/mm ² (Tinst)	BLOCKWORK 14N/mm ² (Tinst)	BLOCKWORK 7N/mm ² (Tinst)		
M5	53	12	25	30	50	27	8	6.5	2.5	2.5	1.5	1	69-572	RLK-C-05053
	80		46										69-574	RLK-C-05080

Specification Data

RAWLOK® Loose Bolt/Countersunk Performance Data

SIZE	CONCRETE, $f_{ck,cube} = 30N/mm^2$ (C20/25)									
	CHARACTERISTIC LOAD (kN)		DESIGN LOAD FACTORED (kN)		RECOMMENDED LOAD UNFACTORED (kN)		CHARACTERISTIC EDGE DISTANCE (mm)		CHARACTERISTIC SPACING (mm)	
	TENSION (N_{Rk})	SHEAR (V_{Rk})	TENSION (N_{Rd})	SHEAR (V_{Rd})	TENSION (N_{rec})	SHEAR (V_{rec})	TENSION ($C_{cr,N}$)	SHEAR ($C_{cr,V}$)	TENSION & SHEAR ($S_{cr,N}$) ($S_{cr,V}$)	
M5	5.0	3.6	2.3	2.0	1.9	1.7	60	60	60	
M6	6.9	5.4	3.2	3.0	2.7	2.5	70	80	80	
M8	9.3	9.0	4.3	5.0	3.6	4.2	80	100	100	
M10	11.4	12.6	5.3	7.0	4.4	5.8	100	120	120	

SIZE	BRICKWORK, $f_{ck} = 20.5N/mm^2$						BLOCKWORK, $f_{ck} = 14N/mm^2$						BLOCKWORK, $f_{ck} = 7N/mm^2$					
	CHARACTERISTIC LOAD (kN)		DESIGN LOAD (kN)		RECOMMENDED LOAD (kN)		CHARACTERISTIC LOAD (kN)		DESIGN LOAD (kN)		RECOMMENDED LOAD (kN)		CHARACTERISTIC LOAD (kN)		DESIGN LOAD (kN)		RECOMMENDED LOAD (kN)	
	TENSION (N_{Rk})	SHEAR (V_{Rk})	TENSION (N_{Rd})	SHEAR (V_{Rd})	TENSION (N_{rec})	SHEAR (V_{rec})	TENSION (N_{Rk})	SHEAR (V_{Rk})	TENSION (N_{Rd})	SHEAR (V_{Rd})	TENSION (N_{rec})	SHEAR (V_{rec})	TENSION (N_{Rk})	SHEAR (V_{Rk})	TENSION (N_{Rd})	SHEAR (V_{Rd})	TENSION (N_{rec})	SHEAR (V_{rec})
M5	2.4	3.4	1.1	1.9	0.9	1.6	1.9	3.4	0.9	1.9	0.8	1.6	1.5	2.3	0.7	1.3	0.6	1.1
M6	3.7	5.2	1.7	2.9	1.4	2.4	3.2	5.2	1.5	2.9	1.3	2.4	2.4	2.5	1.1	1.4	0.9	1.2
M8	5.0	8.6	2.3	4.8	1.9	4.0	4.5	8.6	2.1	4.8	1.8	4.0	3.5	2.7	1.6	1.5	1.3	1.3
M10	6.0	10.3	2.8	5.7	2.3	4.8	5.6	10.3	2.6	5.7	2.2	4.8	4.5	3.1	2.1	1.7	1.8	1.4

For further explanations on calculations please see pages 10 and 11
 When calculating loads in brickwork and blockwork apply the published edge distance and spacing for concrete and assume these figures to be the absolute minimums. Concrete reduction factors must NOT be applied.

Reduction Factors - Edge and Spacing Distances for Rawlok® Loose Bolt.

The full characteristic edge and spacing distances shown in the table above are the minimum allowable for the quoted DESIGN RESISTANCE or RECOMMENDED LOAD, depending on your design method.

Where these dimensions are not achievable, the appropriate reduction factor/s from the tables below must be applied to the DESIGN RESISTANCE or RECOMMENDED LOAD. Choose the required bolt diameter across the top of the appropriate table and read down the left hand column until actual edge or spacing distance is found.

Read off the reduction factor where the two lines intersect (interpolate as required). Multiply this factor by the DESIGN RESISTANCE or RECOMMENDED LOAD quoted in the table. On the occasion that multiple close edge and/or spacing distances occur, the appropriate reduction factors must be applied.

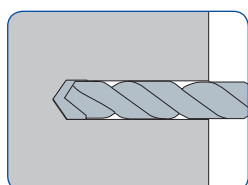
Edge Distance (Concrete Only)

EDGE (mm)	TENSILE: EDGE REDUCTION FACTORS				EDGE (mm)	SHEAR: EDGE REDUCTION FACTORS			
	M5	M6	M8	M10		M5	M6	M8	M10
40	0.75				40	0.58			
50	0.87	0.79			50	0.79	0.53		
60	1.00	0.89	0.81		60	1.00	0.69	0.50	
70		1.00	0.91	0.77	70		0.84	0.62	0.48
80			1.00	0.85	80		1.00	0.75	0.58
90				0.92	90			0.87	0.69
100				1.00	100			1.00	0.79
120					120				1.00

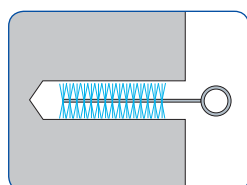
Spacing (Concrete Only)

SPACING (mm)	TENSILE & SHEAR REDUCTION FACTORS			
	M5	M6	M8	M10
40	0.80			
50	0.90	0.77		
60	1.00	0.85	0.76	
70		0.92	0.82	0.75
80		1.00	0.88	0.80
90			0.94	0.85
100			1.00	0.90
120				1.00

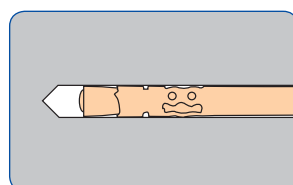
Installation



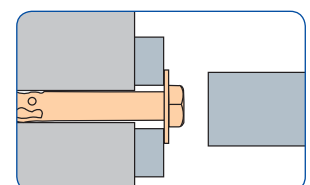
1. Drill a hole of required diameter and depth.
Note: When fixing into brickwork, mortar joints should be avoided.



2. Remove debris and thoroughly clean hole with brush and pump.



3. Insert Rawlok® Sleeve Anchor through the fixture into the hole.



4. Tighten to recommended torque with torque wrench.